

REMARKS

Claims 1, 3-4, 6, 8-11, 24-30, 33-34, 36-38, 40, 42 and 47-53 are pending in the application.

Claims 1, 3-4, 6, 8-11, 24-30, 33-34, 36-38, 40, 42 and 47-53 are rejected.

Claims 36-38, 40 and 42 are rejected under 35 U.S.C. 112.

Claims 1, 3-4, 6, 8-11, 24—30, 33-34, 36-38, 40, 42 and 47-53 are rejected under 35 U.S.C. 103(a).

Claims 52 and 53 are cancelled.

Claims 1, 36-38, 40, 42 and 47 are amended.

No new matter is added.

Claims 1, 3-4, 6, 8-11, 24-30, 33-34, 36-38, 40, 42 and 47-51 remain in the case for consideration.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Specification

The disclosure is objected to because of the following informalities: Applicant's related application information should be updated.

The present application is a divisional of U.S. Patent Application No. 10/192,800, filed on July 9, 2002, now issued as U.S. Pat. No. 6,642,627 and the specification accurately reflects this claim of priority. Therefore, applicants believe that no further action is necessary.

Claim Rejections – 35 U.S.C. § 112

Claims 36-38, 40 and 42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 36 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language.

Claims 36-38, 40 and 42 are amended to replace the descriptors “first” and “second” throughout with the more accurate descriptors “lower” and “upper,” respectively. The Applicants believe these amendments overcome the rejections and place the claims in allowable condition.

Claim Rejections – 35 U.S.C. § 103

Claims 1, 3-4, 6, 8-11, 24-30, 33-34, 36-38, 40, 42 and 47-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai, et al. (U.S. Patent No. 6,503,776 B2) in view of Akram, et al. (U.S. Patent No. 6,228,687 B1). The rejections are respectfully traversed.

With respect to amended independent claim 1, the claim is amended to incorporate limitations from dependent claim 52, which is cancelled hereby. Claim 53 is also cancelled. Claim 1, as amended, recites that an insulating layer is formed on the pad-rearrangement pattern and that the bond pads on the pad-rearrangement pattern are exposed through the insulating layer. Looking at FIGS. 7-8, the pad-rearrangement pattern 15 is formed and then the insulating layer 18 is formed over the pad-rearrangement pattern 15. The bond pads 17 are exposed through the insulating layer 18.

Akram is cited for disclosing an insulating layer formed on a pad-rearrangement layer. Akram, however, discloses that the insulative layer 220 is part of the substrate 218 and that the conductive traces 22 are formed on top of the insulative layer 220.

Following the Examiner's argument with respect to the limitation "a pad-rearrangement pattern directly contacting the bond pad wiring pattern" as recited in claim 1, bond pads 216 in Akram represent the bond pad wiring pattern of the claim and conductive traces 222 represent the bond pad-rearrangement pattern of the claim. The Examiner further argues that conductive bumps 217 can be combined with the conductive traces 222 to teach the bond pad-rearrangement pattern. In this respect, the Examiner argued that the 35 U.S.C. § 103 rejection based on a pad-rearrangement pattern(s) and a wiring layer and solder deals with an issue of the integration of multiple pieces into one piece or conversely, using multiple pieces in replacing a single piece. The Examiner then goes on to cite several patent cases such as *In re Larson* 144 USPQ 347 (CCPA 1965) in support of his argument.

However, applicants believe that none of the cases cited by the Examiner have similar facts to the present case and, therefore, those cases are not in point. In particular, in *In re Larson*, a brake drum *integral with* the clamping means is held to be taught by the prior art structure having a brake disk *rigidly secured* to the wheel hub. Thus, as the court put, the essential difference between the prior art construction and that of the claim at issue was the manner of connecting the brake disc or drum to the clamping means. In other words, both the prior art configuration and the claim at issue disclose the same or equivalent elements, i.e., the brake disc and the clamping means, although in *re Larson* the brake disc and the clamping means comprise several parts. But, the difference between the prior art configuration and the

configuration of the claimed invention was the way those elements were connected. Also, the situation of *In re Fridolph*, in which the different elements are found in both the appealed claims and the prior art; and the appellant merely argued that the integral combination of those elements was not found nor suggested in any of the references, was similar to that of *In re Larson*.

In contrast, the claimed invention and Akram show different elements. In particular, the claimed invention recited in claim 1 recites, "a pad-rearrangement pattern *directly contacting* the bond pad-wiring pattern, whereas, in Akram, the conductive bump 217, however, is additionally placed between the conductive traces 222 and the bond pads 216. Applicants respectfully submit that the conductive bump 217 is a *separate* element that require a *separate* manufacturing step to create, which can translate into substantial additional manufacturing costs and processing complexity. The configuration of Akram and the configuration of the claimed invention involve different elements unlike the above cited cases. One of ordinary skill in the art would appreciate that having additional elements between the two elements may translate into substantial costs and complexity of processing. For these reasons, the patent cases cited by the Examiner are not on point and should not be applied to the present case. Otherwise, it would effectively vitiate the proper claim limitation intended by the applicants.

Thus, the Applicants believe that the conductive traces 222 of Akram are representative of the bond pad-rearrangement pattern and that the traces do not directly contact the bond pads 216.

Even if the conductive traces 222 and conductive bumps 217 could be construed to be a single element (which the applicants do not concede), an insulative layer is not formed on these elements and, thus, any bond pad on these elements is not exposed through an insulative layer. The bond pad 216, which is not part of bond pad-rearrangement pattern, is exposed through aperture 228 in the insulative layer 220. But the bond pad 216 is not the bond pad included on a bond pad-rearrangement pattern. The insulative layer 220 in Akram underlies the conductive traces 216 and is not formed on the traces.

Thus, Pai in view of Akram fails to present a *prima facie* case of obviousness with respect to amended independent claim 1 because they fail to disclose each and every element of claim 1. Therefore, claim 1 is believed to be allowable and allowance is respectfully requested.

Claims 3, 4, 6, 8-11 and 51, which depend from amended independent claim 1, are believed to be allowable for their dependency and their own merits. For example, the

Examiner has not cited specific teachings of Akram with respect to the limitations of claim 10, i.e., the bond pad wiring pattern is formed on a portion of the peripheral circuit region and extends across a portion of the cell region and the limitations of claim 11, i.e., the bond pad wiring pattern is formed entirely within the peripheral circuit region.

With respect to independent claim 24, this claim also recites that an insulating layer is formed on the pad-rearrangement pattern and that the bond pads on the pad-rearrangement pattern are exposed through the insulating layer.

As explained above, Akram does not disclose an insulating layer formed on the bond pad-rearrangement pattern and also does not disclose any bond pad on a bond pad-rearrangement pattern being exposed through the insulating layer. Further, conductive bump 217 is a separate element requiring a separate manufacturing step from that of forming the conductive traces 222 and is, thus not part of the conductive traces 222. Thus, the conductive traces 222 do not directly contact the bond pads 216.

Thus, Pai in view of Akram fails to present a *prima facie* case of obviousness with respect to independent claim 24 because they fail to disclose each and every element of claim 24. Therefore, claim 24 is believed to be allowable and allowance is respectfully requested.

Claims 25-30, 33 and 24 all depend from independent claim 24, and for at least the reasons given for claim 24, these claims are believed to be allowable and allowance is respectfully requested.

With respect to independent claim 36, this claim also recites that an insulating layer is formed on the pad-rearrangement pattern and that the bond pads on the pad-rearrangement pattern are exposed through the insulating layer.

As explained above, Akram does not disclose an insulating layer formed on the bond pad-rearrangement pattern and also does not disclose any bond pad on a bond pad-rearrangement pattern being exposed through the insulating layer. Further, conductive bump 217 is a separate element requiring a separate manufacturing step from that of forming the conductive traces 222 and is, thus not part of the conductive traces 222. Thus, the conductive traces 222 do not directly contact the bond pads 216.

Thus, Pai in view of Akram fails to present a *prima facie* case of obviousness with respect to independent claim 36 because they fail to disclose each and every element of claim 36. Therefore, claim 36 is believed to be allowable and allowance is respectfully requested.

Claims 37, 38, 40 and 42 all depend from independent claim 36, and for at least the reasons given for claim 36, these claims are believed to be allowable and allowance is respectfully requested.

With respect to independent claim 47, this claim also recites that an insulating layer is formed on the pad-rearrangement pattern and is amended to clarify that the bond pads on the pad-rearrangement pattern are exposed through the insulating layer.

As explained above, Akram does not disclose an insulating layer formed on the bond pad-rearrangement pattern and also does not disclose any bond pad on a bond pad-rearrangement pattern being exposed through the insulating layer. Further, conductive bump 217 is a separate element requiring a separate manufacturing step from that of forming the conductive traces 222 and is, thus not part of the conductive traces 222. Thus, the conductive traces 222 do not directly contact the bond pads 216.

Thus, Pai in view of Akram fails to present a *prima facie* case of obviousness with respect to independent claim 47 because they fail to disclose each and every element of claim 47. Therefore, claim 47 is believed to be allowable and allowance is respectfully requested.

Claims 48-50 all depend from independent claim 47, and for at least the reasons given for claim 36, these claims are believed to be allowable and allowance is respectfully requested.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pai, et al. (U.S. Patent No. 6,503,776 B2) in view of Akram, et al. (U.S. Patent No. 6,228,687 B1) and further in view of Hsuan, et al. (U.S. Patent No. 6,239,366 B1). The rejection is respectfully traversed.

Applicants believe that the Examiner incorrectly identified claim 6 in the Office Action. Claim 7 recites that one of the two or more chips is a DRAM and the other is a flash memory.

Claim 7 depends from amended independent claim 1 and, thus, necessarily includes all of the limitations of claim 1. The addition of Hsuan fails to cure the deficiencies of Pai and Akram with respect to claim 1. Thus, Pai in view of Akram and in further view of Hsuan fails to present a *prima facie* case of obviousness with respect to claim 7 because they do not disclose each and every element of claim 1 and, thus, do not disclose each and every element of claim 7. Therefore, claim 7 is believed to be allowable and allowance is respectfully requested.

For the foregoing reasons, reconsideration and allowance of claims 1, 3-4, 6, 8-11, 24-30, 33-34, 36-38, 40, 42 and 47-51 of the application as amended is solicited. The Examiner

is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

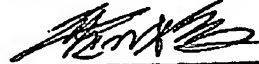
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